

Dear Reader,

This Newsletter is intended for all SPS members, researchers, industries, students, interested specialists and physics friends. Feel free to share this Newsletter within your community, and follow this [link](#) if you want to add a person to our mailing list.

If you wish to give your contribution with news or suggestions, please do not hesitate to contact me at: margherita.boselli@cern.ch

Kind regards,

Margherita Boselli

A word from our President

2020, a very special year comes to end giving new hopes for the coming 2021

A tiny virus kept the whole world in his grip and is still continuing doing so. This virus was a surprise to most of us, and changed our lives in unprecedented ways with manifold implications on all of us.

In my end of year message of one year ago, I wrote in December 2019: *“Looking forward to the new decade, nobody can tell what it will bring. Physics advances in all fields it engages in, offering insights - sometimes unexpected - and new results, also contributing to the solution of important societal problems like diminishing natural resources and climate change.”*

The virus and how to curb the threads posed by the pandemic needed to be added to the list of societal problems, and physics added its share towards solving, curbing and lingering the impact the virus has on our lives. Be it with the analysis tools and methods provided by physics, that have turned out to be useful to analyse the virus and its spread, or directly with physicists who redirected their daily activities and joined forces in often interdisciplinary teams. Such teams are at the base of new insights gained and of recommendations made that need to be adopted in society. This way, an interplay of physics, or more generally, of science with politics evolved to a new scale. The discussion in society on this interplay between science and politics is complex and trust in science and in politics, which are both pillars of society, could erode from it. If tackled correctly, both pillars will come out strengthened. Contributing to an open dialogue and exchange with society is, as we understand more and more, crucial for a healthy society. Despite the pandemic, we have managed to keep the society thriving, with communication, interactions and meetings held via digital means. SPS prizes have been awarded to young physicists, new honorary members have been appointed and new members were elected for the board – all digitally! I would like to thank to all who have helped making this new *modus operandi* possible, and to all who are engaged in SPS for strengthening and promoting physics throughout the Swiss landscape and beyond.

I wish you in the name of the SPS Board to you and your loved ones happy holidays and a healthy, peaceful and successful 2021, which, as we all hope, will be shaped less by the virus.



Hans Peter Beck,

SPS President

Image from Stellarium

WHAT'S UP IN SWITZERLAND?

Innovation projects: Impulse program innovation strength Switzerland

Innosuisse will launch an impulse program Innovation Strength Switzerland. The objective of the impulse program is to stimulate the innovation activities, to maintain the innovative strength and secure the long-term competitiveness **of small to medium-sized companies and organizations in Switzerland** in view of the current COVID-19 pandemic.

Within the framework of this program, the contributions of the implementation partners can be reduced for new innovation projects submitted in 2021 and 2022, as compared to the usual projects. Innosuisse published details on its [website](#). The submission of [standard innovation projects](#) remains possible at any time.



Innovation projects: Flagship initiative

Consortia of research and implementation partners will be able to submit applications thanks to the new [Flagship Initiative](#). This initiative aims to promote systemic innovation in key areas for economy and society, as well as to promote transdisciplinary collaborations. Innosuisse announced specific but broad [flagship topics](#) in order to encourage applicants to address issues that are of particular interest for the future well-being of the country, and where new solutions and business models are required. The first call for proposals will be published in January 2021. Innosuisse organizes a [webinar on January 26 2021](#) in order to provide detailed information on the newly launched Flagship Initiative and to answer possible questions.



A bronze medal and honorable mentions for the Swiss young talents at the International Physics Olympiad

If participants cannot make it to the [Physics Olympiad](#), the Olympiad come to them. This is what happened during the virtual version of the **International Physics Olympiad**, which took place from 7 to 15 December, organized by Moscow, bringing together young people from more than 40 different countries. The five Swiss participants spent the examination days at the Hotel Bad Ramsach (BL), accompanied by volunteers from the Swiss Physics Olympiad. A Russian representative was also on site to bring common material to all teams and ensure the smooth running of the competition. In the race for Switzerland: Dominik Moos, Kantonsschule Zug (ZG), Lennart Horn, Kantonsschule Solothurn (SO), Leo Thom, Kantonsschule Kreuzlingen (TG), Loïc Nicollerat, CEC Emilie-Gourd (VS), Petr Ermolaev, Lycée Collège de la Planta (GE). Dominik, who had already won the SPS Young Talent Award, bronze at the European Physics Olympics, also won **bronze** in this international edition. Lennart, Leo, Loïc and Petr received an **honorable mention**.



Physics is one of the nine scientific topics represented at the **Science Olympics**. In the school year 2019/2020, 3858 Swiss young people took part in one of these events, and the Swiss Science Olympics committee recently [published](#) an **overview** of Swiss schools' participation.

Picture of the Swiss team, from Physics Olympiad.

Registration is open for Beamline for Schools 2021

[Beamline for Schools](#) is a unique science competition where **high-school students** from anywhere in the world team up and create a **physics experiment** to be performed at the beamline of a leading particle accelerator. After seven successful editions, the **2021 edition of Beamline for Schools** has been announced by [CERN](#) and [DESY](#), Hamburg, Germany, and the teams can register [here](#). The teams that submit the best two proposals win a two-weeks long stay at DESY to carry out their experiments, with the support of a team of scientists from both CERN and DESY.



It's a great opportunity to know more about the fascinating world of particle Physics, to experience what is like to be a scientist, and to get in touch with young people from all over the world. Take a look to the competition's website for ideas and information.

A picture from the 2020 edition of [Beamline for Schools](#), image from CERN CDS.

International day of Women and Girls in Science: women scientists visit local schools!

February 11 is the [International day of Women and Girls in Science](#), on this occasion and for the whole week, **female scientists and engineers** from [CERN](#), the [Scienscope](#) of the University of Geneva and [EPFL](#) will **meet local schools** to talk about their job to (mixed) classes. They are invited to tell their story, reveal some mysteries of science and, if they wish, to conduct some small demonstrations. The goal is to change the pupils' perception of the scientific and engineering professions, providing them with female role models. And who knows, perhaps interest more pupils, particularly girls, in a scientific career. People interested in taking part in this initiative are invited to [get more information and submit](#) their application **by January 6 2021**.



Image from the event's [website](#).

Online Conference "MINT Switzerland" 2021

["MINT Switzerland"](#) is a Swiss-wide program of the Swiss Academies of Arts and Sciences, running from 2017 to 2020, and aiming at promoting MINT skills and interests (Mathematics, Informatics/Computer Science, Natural and Technical Sciences) among children and young people. The program has seen a number of innovations, including support for projects set up by major institutions with a reach beyond cantonal borders, as well as for innovative projects that prepare children and young people for the digital future. The Swiss Academies are organizing [an online conference](#) on January the 19th 2021 with, among others, Prof. Elsbeth Stern, ETHZ and Prof. Francesco Mondada, EPFL, who will discuss gender issues in the context of the promotion of MINT domains and the age at which these domains should begin to be promoted.



CERN announces new open data policy

The four main LHC collaborations (ALICE, ATLAS, CMS and LHCb) have unanimously endorsed a **new open data policy** for scientific experiments at the Large Hadron Collider (LHC), which was [presented](#) to the CERN Council on December the 11th. The policy commits to publicly releasing so-called level 3 scientific data, the type required to make scientific studies, collected by the LHC experiments. Data will start to be released approximately five years after collection, and the aim is for the full dataset to be publicly available by the close of the experiment concerned. The policy addresses the growing movement of **open science**, which aims to make scientific research more reproducible, accessible, and collaborative.



Scientific datasets will be released through the CERN [Open Data Portal](#), which already hosts a comprehensive set of data related to the LHC and other experiments.

WHAT'S UP IN THE WORLD?

Jupiter and Saturn are having their closest encounter in almost 400 years on December

A great conjunction happens when the planets Jupiter and Saturn appear very close to one another in the sky because they line up with Earth. [Saturn and Jupiter can now be seen](#) near the south-west horizon, in the hour after sunset, slowly getting closer with each passing night. **On December the 21st** they are the closest they have been to one another in the night sky since 1623 (separated by only 6', about 1/5 of lunar diameter). Under high magnification of your telescope, you are able to see both planets simultaneously in the same field of view, Saturn with its ring system and Jupiter with its cloud bands and Galilean satellites! For this, it is imperative to look for them as early as possible in the evening, before the planetary duo is too low on the horizon and the atmospheric turbulence blurs the images. In case of overcast skies, [this simulation](#) will be appreciated.



Image from Kepler *De Stella Nova*, showing grand conjunctions in the zodiac from 1583 to 1763

ANNOUNCEMENTS

Heinrich Hertz Fellowships in History and Philosophy of physics at the University of Bonn

The **Heinrich Hertz Fellowship in History and Philosophy of physics** is designed to allow graduate students (typically PhD students but Master students can also apply) and early-career postdoctoral scholars to spend either half of or a full academic year at the **University of Bonn** to work on any topic in the history and philosophy of physics.

Applicants should send their complete application documents **by 31 January 2021** to Ms Yvonne Luks at office.lehmkuhl@uni-bonn.de. A complete application consists of a.) a cover letter, a curriculum vitae, a writing sample of no more than 10.000 words; and b.) up to three letters of reference which must be sent by the letter writers or the placement service directly to the above address. All these documents should be combined and converted in PDF.

In case of questions, please contact Prof. Lehmkuhl at: dennis.lehmkuhl@uni-bonn.de.

The Swiss Physical Society (SPS) unites persons interested in physics from university, schools, research, development and industry. The SPS promotes the scientific exchange of ideas in Switzerland and with its international environment.

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